REMARKS

Claims 1-7 and 9-17 are pending in the instant application. A complete Listing of Claims with appropriate status identifier begins on page 3 of this communication.

By the present communication, no claim is amended. Unless indicated otherwise, all references herein to the specification refer to the substitute specification submitted September 29, 2005.

With respect to all amendments and canceled claims, Applicants have not dedicated or abandoned any unclaimed subject matter, and, moreover, have not acquiesced to any rejections or objections made by the Patent Office. Applicants expressly reserve the right to pursue prosecution of any presently excluded subject matter or claim embodiments in one or more future continuation and/or divisional application(s).

Applicants have carefully considered the points raised in the Office Action and believe that the Examiner's concerns have been addressed as described herein. The arguments presented herein are respectfully submitted to place the application in condition for allowance, or at a minimum, in better condition for appeal (MPEP § 714.13). In particular, no additional search or examination burden for the Examiner is required by the present communication. Accordingly, entry of the amendments and arguments provided herewith is respectfully requested.

Objections to the Specification

The specification was objected to (Office Action, page 3, item 6) as allegedly including new matter in the amendment filed December 2, 2002, with respect to incorporation by reference to International Application, WPI Acc. No. 93-182488/22.

Applicants respectfully disagree with this objection for reasons already of record. However, in an effort to reduce the issues and expedite prosecution, by the amendment provided herewith Applicants delete Examples 9-19 of the Substitute Specification filed September 29, 2005. Accordingly, Applicants respectfully request reconsideration and withdrawal of the current objection.

Provisional rejections under judicially created doctrine of double patenting

Claims 1-6 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting (Office Action, page 3, item 7) as allegedly being unpatentable over the claims of co-pending U.S. Pat. Application No. 09/445,517 (hereinafter "the '517 application"). Claims 7, 13, 14 and 16 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting (Office Action, page 3, item 8) as allegedly being unpatentable over claim 33 of the '517 application. Applicants submit herewith a terminal disclaimer to any patent issuing from the '517 application. Accordingly, Applicants respectfully request reconsideration and withdrawal of the current rejection.

Claims 7, 14 and 16 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting (Office Action, page 4, item 9) as allegedly being unpatentable over claim 6 of co-pending U.S. Pat. Application No. 10/851,574 (hereinafter "the '574 application"). Applicants submit herewith a terminal disclaimer to any patent issuing from the '574 application. Accordingly, Applicants respectfully request reconsideration and withdrawal of the current rejection.

Rejections under judicially created doctrine of obviousness-type double patenting

Claims 7, 14, 16 and 17

The rejection of Claims 7, 14, 16 and 17 (Office Action, page 7, item 26) under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 34 and 35 of U.S. Pat. No. 5,686,411 issued to Gaeta *et al.* (the "'411 patent") as evidenced by Tsanev (*Vutr. Boles* 23:12-17, 1984, abstract), is respectfully traversed for reasons of record and as provided herewith.

Claims 7, 14, 16 and 17 of the instant application as currently amended are directed to methods for treating obesity in a human subject in need of such treatment, which methods require administration of a composition or compound containing an amylin or an amylin agonist, wherein the amount of the composition or compound administered is effective to treat obesity by inhibiting weight gain or inducing weight loss, and wherein the subject is in need of treatment for obesity. In contrast, as acknowledged by the Examiner (Office Action, page 7, para. 2), Claims

34 and 35 of the '411 patent are merely directed to methods for the treatment of diabetes mellitus in a mammal comprising the administration to the mammal of a therapeutically effective amount of a particular amylin agonist analogue.

The cited claims of the '411 patent are silent with regard to treating obesity. In an attempt to cure the deficiency of Claims 34 and 35 of the '411 patent, the Examiner relies on Tsanev (*Id.*) to provide alleged evidence that 80-90% of diabetic patients are obese. In view of the disclosure of Tsanev (*Id.*), the Examiner asserts (Office Action, page 7, lines 22-24) that "[g]iven the art-known prevalence of intrinsic obesity in 80% to 90% of diabetic patients as disclosed by Tsanev, at least one of the human diabetic patients used in the method disclosed in the '411 patent qualified as a human patient in need of treatment for obesity." The Examiner further asserts (Office action, page 7, lines 25-27) that "the method of the '411 patent comprising or consisting of the administration of 0.1 to 5 mg, or 0.5 to 1.0 mg of the amylin agonist, ^{25,28,29}Pro-human amylin alone or in conjunction with insulin or glucagon, to a diabetic human anticipates the instant claims."

Even if obesity is common among those with diabetes as asserted by Tsanev (*Id.*), a claim to treating diabetes mellitus with an amylin agonist analogue does not teach or suggest treating obese patients as claimed. In particular, nothing in the cited claims teaches or suggests the identification of or intent to treat a subject in need of treatment for obesity. Specifically, the courts have held that the phrase "in need thereof" (e.g., as recited in independent Claims 1, 7, 14 and 16) is meaningful, and that "the claims' recitation of a patient or a human 'in need' gives life and meaning to the preambles' statement of purpose." *Jansen v. Rexall Sundown, Inc.* 342 F.3d 1329, 1333 (Fed. Cir. 2003). Thus, since the cited claims do not teach or suggest treating obesity, the intent to treat human subjects in need of treatment for obesity, or the use of an amount effective to treat obesity, a skilled artisan would have no expectation of success for the claimed invention in view of the cited claims.

Applicants further disagree with the Examiner's apparent assertion of inherent anticipation in view of Tsanev (*Id.*). Anticipation based on inherency is appropriate only when the prior art relied upon necessarily includes all of the elements of the claims in question, *Atofina v. Great Lakes Chemical Corp.*, 441 F.3d 991, 78 USPQ2d 1417, 1424 (Fed. Cir. 2006), and is

the natural result of following the instructions or examples of the prior art. *SmithKline Beecham Corp. v. Apotex Corp.*, 403 F.3d 1331, 1334, 74 USPQ2d 1398, 1407 (Fed. Cir. 2005) (citing *Schering Corp. v. Geneva Pharms., Inc.*, 339 F. 3d 1373, 1377, 67 USPQ2d 1664, 1667 (Fed. Cir. 2003)). The Court in *Schering* relied in part on the decision *In re Cruciferous Sprouts Litigation,* 301 F.3d 1343, 1351, 64 USPQ2d 1202, 1206 (Fed. Cir. 2002) wherein it was noted that to demonstrate inherency, it was necessary to show that the prior art necessarily, always functions in accordance with the claims addressed. The requirement that the teaching of a reference always, under any circumstances, necessarily satisfies the recitation of the claims to make out a case of inherent anticipation was reaffirmed by the Federal Circuit in *Abbott Laboratories v. Baxter Pharmaceutical Products, Inc.*, 471 F.3d 1363, 1368 (Fed. Cir. 2006). It is well settled that a determination of inherency cannot be established by probabilities or possibilities, but that it is incumbent upon the Examiner to establish the inevitability of the inherency which is propounded. *In re Oelrich*, 666 F.2d 578, 581, 212 USPQ 323, 326 (CCPA 1981); *In re Wilding*, 535 F.2d 631, 635-36, 190 USPQ 59, 63-64 (CCPA 1976).

As acknowledged by the Examiner (Office Action, page 7, line 22), Tsanev (*Id.*) discloses that 80-90% of diabetic patients are obese. Accordingly, 80-90% falls short of the 100% (i.e., always, under any circumstances) criterion required by the present claims and required by the law. Accordingly, Claims 34 and 35 of the '411 patent support neither *prima facie* obviousness nor anticipation with regard to the claimed invention, and Applicants respectfully request reconsideration and withdrawal of the present rejection.

Claims 7, 14 and 16

The rejection of Claims 7, 14 and 16 (Office Action, page 8, item 27) under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over Claims 11 and 13 of U.S. Pat. No. 5,321,008 ("the '008 patent") as evidenced by Tsanev (*Id.*) and by U.S. Pat. No. 5,739,106 ("the '106 patent"), is respectfully traversed.

As noted above, Claims 7, 14, and 16 as amended are directed to methods for treating obesity in a human subject in need of such treatment through administration of a composition or compound containing an amylin or an amylin agonist. The courts have held that the phrase "in need thereof" (e.g., as recited in independent Claims 1, 7, 14 and 16) is meaningful, and that "the

claims' recitation of a patient or a human 'in need' gives life and meaning to the preambles' statement of purpose." *Jansen v. Rexall Sundown, Inc.* (*Id.*)

In contrast, Claim 11 of the '008 patent is directed to a method for the treatment of diabetes mellitus in an insulin-requiring mammal (human) comprising administering a therapeutically effective amount of a calcitonin. Further, Claim 13 of the '008 patent is directed to the method of treatment of type II diabetes mellitus comprising the step of administering a therapeutically effective amount of an insulin and a calcitonin where the ratio of insulin to calcitonin from about 100:1 to about 1:2 and is effective to achieve improved glycemic control over insulin therapy alone. However, the cited claims of the '008 patent are silent with regard to treating obesity.

In an effort to cure the deficiencies of the '008 patent, the Examiner relies upon Tsanev (*Id.*) in asserting (Office Action, page 8, line 28 to page 9, line 3) that "given the art-known prevalence of intrinsic obesity in 80% to 90% of diabetic patients as disclosed by Tsanev (see abstract), at least one insulin-requiring human diabetic patient used in the method disclosed in the above-identified claims in the '008 patent qualifies as a human patient in need of treatment for obesity."

However, even if obesity is common among those with diabetes, a claim to treating diabetes mellitus does not necessarily teach or suggest treating patients with obesity as claimed. Similar to the rejection for obviousness-type double patenting based on the '411 patent above, the Examiner's attempts to cure the deficiencies of the '008 patent by citing the alleged prevalence of intrinsic obesity (80-90% according to Tsanev) falls short of the 100% required by the claims and required by the law. Furthermore, since the cited claims do not teach or suggest treating obesity or the use of an amount effective to treat obesity, a skilled artisan would have no expectation of success for the claimed invention in view of the cited claims. Thus, claims 11 and 13 of the '008 patent do not support anticipation or obviousness with regard to the claimed invention. Accordingly, Applicants respectfully request reconsideration and withdrawal of the present rejection.

Rejection under 35 U.S.C. §112, first paragraph (New Matter)

The rejection of Claims 1, 7, 14 and 16 (Office Action, page 9, item 28) under 35 U.S.C. §112, first paragraph, and dependent claims 2-6, 9-13, 15 and 17 as allegedly containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention (new matter rejection), is respectfully traversed.

The Examiner alleges that the amendments to Claims 1, 7 and 16 which include the requirement of "an amount effective to inhibit weight gain ..... in said human subject ....." (Office Action, page 9, last paragraph) or the grammatically equivalent phrasing of Claim 14 are not supported by the specification. Applicants respectfully submit that support for the concept of the inhibition of weight gain is found in the specification at, e.g., page 9, lines 14-15. Indeed, the specification at this passage discloses that "[t]reating or preventing obesity therefor includes the inhibition of weight gain and inducing weight loss in patients in need thereof."

The Examiner further alleges (Office Action, page 9, line last to page 10, line 3) that "[a]s claimed currently, 'an amount effective to inhibit weight gain or induce weight loss in said human subject' is not the amount of the recited amylin or the amylin agonist, but of the composition that 'comprises' an amylin, amylin agonist, or an amylin agonist analogue plus a pharmaceutically acceptable carrier plus any other element that is comprised with the composition." Applicants respectfully submit that the amount effective to treat obesity of a composition comprising the required amylin or amylin agonist of the invention is determined by routine methods of pharmaceutical research, and that effectiveness is due to the amylin or amylin agonist, not any excipient, in the composition administered to the human subject in need of treatment for obesity.

The Examiner further alleges (Office Action, page 10, lines 17-18) a lack of support for "an amount of a salt of amylin or an amylin agonist compound and its administration to a human subject in need of treatment for obesity wherein the amount of the salt compound is effective to treat obesity in said subject by inhibiting weight gain or inducing weight loss, wherein the salt compound is not administered in conjunction with another obesity relief agent, as claimed currently in the amendment claim 14." Applicants respectfully submit that support for the

concept of salts of the compounds of the invention are found throughout the specification at, e.g., page 20, lines 20-21.

The Examiner further alleges (Office Action, page 11, line 22 to page 12, line 16) that the specification does not provide descriptive support for the transitional term of art "consisting" found in Claim 1 as amended. Applicants respectfully submit that the term "consisting" as used in Claim 1 is a term of art (transitional claim language) that need not be specifically recited in the specification.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the current rejections under 35 U.S.C. §112, first paragraph, to Claims 1, 7, 14 and 16, and Claims 2-6, 9-13, 15 and 17 dependent therefrom.

Rejection(s) under 35 U.S.C. §112, first paragraph (Scope of Enablement)

The rejection of Claims 1-7 and 9-17 under 35 U.S.C. § 112, first paragraph (Office Action, page 11, item 29), for alleged lack of enablement is respectfully traversed.

The proper standard for determining compliance with the enablement requirement is whether the specification provides sufficient information to permit one skilled in the art to make and use the claimed invention. *United States v. Telectronics, Inc.*, 8 USPQ2d 1217, 1223 (Fed. Cir. 1988). The test of enablement is not whether experimentation is necessary, but rather whether any experimentation that is necessary is undue. A considerable amount of experimentation is permitted, provided that it is merely routine, or provided that the specification provides a reasonable amount of guidance with respect to the direction in which the experimentation should proceed. *In re Wands*, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988). A specification that discloses how to make and use a claimed invention in terms which correspond in scope to those used in describing and defining the subject matter sought to be patented "must be taken as in compliance with the enabling requirement of the first paragraph of $ 112 unless there is reason to doubt the objective truth of the statements contained therein." *In re Brana*, 51 F.3d 1560, 1566, 34 U.S.P.Q.2d 1436, 1441 (Fed. Cir. 1995) (quoting *In re Marzocchi*, 439 F.2d 220, 223, 169 U.S.P.Q. 367, 369 (C.C.P.A. 1971) (emphasis in original)).

With respect to reasons for doubting the objective truth of the specification, the Examiner asserts (Office Action, page 17, line 24 to page 18, line 3) that Applicants' discussion (Applicants' Appeal Brief filed July 2000) regarding U.S. 5,739,106 (the "Rink patent" already of record) allegedly provides a reason for doubting the objective truth contained within the specification. However, when read in context, it is clear that the Rink patent only contemplates amylin-induces appetite suppression in rodents. Indeed, the Rink patent does not describe the treatment of obesity in humans using amylin or an amylin agonist as required by the claims of the present invention. Accordingly, Applicants respectfully submit that the Examiner's reliance on Applicants' Appeal Brief filed July 2000 regarding the Rink patent is irrelevant.

It is well established that enablement does not require the inventor to submit an exact blueprint or recipe to practice the invention; thus, experimentation is allowed. *In re Angstadt*, 190 USPQ 214 (CCPA 1976). Rather, the determination of what constitutes undue experimentation relies on the Wands factors: (1) the quantity of experimentation necessary (time and expense); (2) the amount of direction or guidance presented; (3) presence of absence of a working example; (4) nature of the invention; (5) the state of the prior art; (6) the relative skills of those in the art; (7) the predictability or unpredictability of the art; and (8) the breadth of the claims. *In re Wands*, *Id.*:

The quantity of experimentation necessary (time and expense)

Regarding the quantity of experimentation needed, Applicants submit that the standard for determining enablement is whether the experimentation needed to practice the invention is undue or unreasonable. *Mineral Separation v. Hyde*, 242 U.S. 261, 270 (1916). In this respect, one of ordinary in the art would have the ability to select amylin and amylin agonist peptides for use in the claimed methods without undue experimentation in view of the specification.

The amount of direction or guidance presented

The specification broadly discloses that the claimed amylin compounds are useful in the treatment of obesity in a subject in need thereof. There is express guidance as to modes of administration, therapeutic dosages, mechanisms for assessing therapeutic efficacy, as well as a working example to demonstrate the statistically significant ability of an exemplary amylin compound to treat obesity in a human subject in need thereof. In the working example, the

human subjects were Type 2 diabetics. That the working example illustrated Type 2 diabetic subjects taking insulin does not render the scope of enablement limited to this subject population. Rather, it demonstrates that in a particularly difficult to treat, obese subject population (Type 2 diabetic subjects taking insulin), an exemplary amylin compound is therapeutically effective in the treatment of obesity.

Moreover, taken together with the teachings of the specification (e.g., page 18, para.3 to page 23, para. 2), the working example provides a base-line approach for establishing therapeutic efficacy of exemplary amylin compounds within the context of the presently claimed methods. Utilizing similar study structures, Applicants have in fact established that exemplary amylin compounds are effective in the treatment of obesity in non-diabetic subjects as well (see, e.g., IDS entries AZ1, AZ2, AZ4 and AZ5 of Aronne, et *al. and* Smith, et *al.* of record). This evidence confirms the teachings of Applicants specification, and demonstrates that Applicants' working example in fact provides enablement of the efficacy of a particularly difficult to treat, chronically obese subject population.

In yet another aspect, the Examiner has also asserted that the specification does not enable administration by *any* route, or administration of "an amount effective to treat obesity" commensurate in scope with the claims. Applicants respectfully submit that the Examiner is attempting to limit the scope of enablement to the scope of Applicants' working examples. Based on the extensive guidance provided in the specification, including the human clinical study results, as well as the high level of skill in the art, the skilled artisan would be able to evaluate efficacy of amylin compounds in accordance with the methods of the inventions to ascertain therapeutically effective amounts of the recited amylin compounds. In fact, the Examiner's characterization of Example 1 only serves to underscore the enablement of the claims in this regard. For instance, Example 1 describes a clinical study wherein routine dosages were evaluated in human clinical subjects to ascertain a therapeutically effective dose as well as effective administration regimens.

The presence of absence of a working example

Applicants submit that the working examples, in combination with the disclosure of the specification and knowledge of one skilled in the art, amply enable the full scope of the invention as presently claimed.

The nature of the invention

Applicants agree with the Examiner's assertion (Office Action, page 12, line 23) that the nature of the invention is pertinent to the treatment of obesity in a human subject in need of such treatment comprising or consisting of administering an amylin, an amylin agonist, or an amylin agonist analogue composition or compound in an amount effective to inhibit weight gain or induce weight loss in the subject. Specifically, the invention contemplates the treatment of obesity in human subject in need of treatment by the administration of an amylin or amylin agonist. Indeed, Applicants discovered that amylin or amylin agonists can be used for the treatment of obesity.

The state of the prior art

Applicants agree with the Examiner's characterization (Office Action, page 12, lines 27-29) of obesity or adiposity as a 'chronic disease' that is highly prevalent in modern society which is strongly associated with multiple conditions including diabetes mellitus, insulin resistance, hypertension, etc. However, it was Applicants' discovery that amylin or amylin agonists could be administered to a human subject in need of treatment for obesity. In this respect, one of ordinary skill in the art would have the ability to select amylin and amylin agonist peptides for use in the claimed methods without undue experimentation. Indeed, amylin compounds recited in the claims are generally recognized as a defined class of compounds, and the specification provides ample direction and guidance to those skilled in the art with regard to the identification of such amylin compounds useful in the context of the claimed methods.

The relative skills of those in the art

The relative skill of one skilled in the art to which the invention pertains is very high.

The predictability or unpredictability of the art

The Examiner alleges that the state of art with regard to the use of amylin is

unpredictable. In this regard, the Examiner asserts (Office Action, page 16 line 28 to page 17, line 14) that both Baron *et al.* and Ratner *et al.* indicate the impracticability of using amylin as a therapeutic agent. Applicants respectfully disagree. Whether native human amylin is suitable for use as a commercial drug product is not a proper standard for judging the enablement of the present claims. Moreover, contrary to the Examiner's characterization of the cited references, it is submitted that both Baron *et al.* and Ratner *et al.* actually support enablement of the claimed invention. That is, given the teachings of the instant specification, one of ordinary in the art would have the ability to select amylin and amylin agonist peptides for use in the claimed methods without undue experimentation. This further confirms that both amylin and amylin agonists are well known compounds that have been widely characterized. Given this, one of ordinary skill in the art would have the requisite skill to practice the invention commensurate in scope with the claims without undue experimentation.

The breadth of the claims

In rejecting the claims, the Examiner impermissibly attempts (e.g., Office Action page 11, line 27 to page 12, line 4) to limit the invention to the scope of the examples. Applicants respectfully submit that such a standard is legally incorrect. As set forth in MPEP 3 2164.02, "[f]or a claimed genus, representative examples together with a statement applicable to the genus as a whole will ordinarily be sufficient if one skilled in the art (in view of level of skill, state of the art and the information in the specification) would expect the claimed genus could be used in that manner without undue experimentation." This is exactly what Applicants have provided. For example, Tables I - I1 and Examples 1-8 disclose data relating to the claimed methods and exemplary amylin compounds. Alone, this disclosure is sufficient such that one of ordinary skill in the art at the time the invention was made would have the ability to practice the invention commensurate in scope with the claims.

The Examiner also comments on the scope of the claimed amylin compounds, and asserts (Office Action, page 20, lines 4-5) that "the only amylin agonist analogue species within the recited broad genus that is being used for inducing weight loss in humans is pramlintide." Applicants respectfully traverse. Again, the Examiner appears to be focusing on Example 1 rather than the teachings of the specification as a whole and the level of ordinary skill in the art.

In this regard, it is noted that amylin compounds recited in the claims are generally recognized as a defined class of compounds, and the specification provides ample direction and guidance to those skilled in the art with regard to the identification of such amylin compounds useful in the context of the claimed methods.

Furthermore, the specification is replete with examples of amylin agonists, including functional variants, fragments, and derivatives of amylin and amylin agonists. See, e.g., Specification page 13 para. 4 to page 17, para. 1. For example, given at least the discussion in the background concerning amylin agonists, as well as the description of SEQ ID NO: 12-17, one of ordinary skill in the art having read the specification would have the ability to select known amylin agonists without undue experimentation. Moreover, to the extent that any additional experimentation may be required, Applicants note that the performance of routine and well known steps cannot create undue experimentation even if it is laborious. See *In re Wands* (*Id.*); *In re Angstadt* (*Id.*).

Given the knowledge in the art, and based on the guidance provided in the specification regarding the extensive exemplary embodiments of amylin compounds, receptor binding assays and other assays for determining amylin activity, including the soleus muscle assay, and exemplary clinical study designs, additional therapeutically active amylin agonists can be identified within the context of the present claims without the need for undue experimentation. The Examiner's attention is respectfully drawn to the lengthy description that provides numerous examples of compounds within the scope of the recited genus, and guidance with regard to assays and clinical studies in the examples useful to evaluate the efficacy of the compounds in the methods of the present invention. Based on such guidance, one of skill in the art would be able to practice the claimed invention with only routine experimentation.

Certain of the dependent claims recite specific types of amylin compounds (e.g., amylin agonist analogues including the amylin agonist analogue of SEQ ID NO: 1). As generally understood by those of skill in the art, amylin analogues are compounds that are structurally related to the reference compound, i.e., amylin. As explained in the specification and understood by those skilled in the art, an amylin analogue can have one or more amino acid substitutions, deletions, inversions, or additions compared to a native or naturally occurring amylin.

Furthermore, the claims clarify that the amylin analogue is an amylin agonist analogue. Thus, in accordance with the claims and the knowledge of those of ordinary skill in the art, the recited amylin agonist analogues are both structurally and functionally defined.

The Examiner also makes numerous comments with regard to the scope of various claim terms and transitional phrases. For instance, various claim terms such as obesity and administering are discussed in a broad context. While Applicants do not necessarily agree with the exact definition provided by the Examiner, Applicants do acknowledge the broad scope of such terms commensurate with the present specification. Furthermore, the Examiner comments on the claims use of traditional transitional phrases such as "comprising," "consisting of," and consisting essentially of'. In this regard, Applicants note that such language have been used in their traditional context. Thus, within the context of the claimed methods for treating obesity, such terms of art would have their traditional meanings and limitations with regard to claim elements relevant to the treatment of obesity. However, such traditional claim terms would have no bearing on components, steps, or elements outside of the claimed scope of the treatment of obesity.

Accordingly, for at least these reasons, it is submitted that the claims are sufficiently enabled under 35 U.S.C. 3 112, first paragraph, and reconsideration and withdrawal of this rejection is respectfully requested.

Rejection(s) under 35 U.S.C. §112, second paragraph

The rejection of Claims 16 and 17 under 35 U.S.C. §112, second paragraph (Office Action, page 20, item 31), for alleged indefiniteness is respectfully traversed. Initially, it is noted that the object of the method (i.e., treating obesity) is expressly provided in the preamble of Claim 16. Claim 16 as amended merely provides two requirements on the amount of a composition administered to a subject in need of treatment for obesity. First, the amount of the composition administered to the subject must be effective to inhibit weight gain or induce weight loss in the subject; and second, the amount must be effective to treat obesity by inhibiting weight gain or inducing weight loss in the subject. Thus, the second requirement expressly fulfills the object (i.e., treating obesity) of the method as provided in the preamble. Accordingly, Applicants respectfully submit that Claim 16 is not indefinite, not confusing and not redundant, and

Applicants respectfully request reconsideration and withdrawal of the current rejection. Applicants further respectfully request the reconsideration and withdrawal of the rejection to Claim 17, having been rejected for depending from Claim 16.

Rejection(s) under 35 U.S.C. §102

In order to anticipate a claim, a single prior art reference must provide each and every element set forth in the claim. *In re Bond*, 15 USPQ2d 1566, 1567 (Fed. Cir. 1990). See also, MPEP §2131. The identical invention must be shown in complete detail as it is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913 (Fed. Cir. 1989).

Claims 1-7, 9-14, 16 and 17

The rejection of Claims 1-7, 9-14, 16 and 17 under 35 U.S.C. § 102(a) (Office Action, page 21, item 33) for alleged anticipation by Kolterman *et al.* (WO 96/40220) ("Kolterman '220") as evidenced by Tsanev (*Id.*) is respectfully traversed.

The claimed invention is directed to methods of treating obesity in a human subject in need of such treatment through administration of an amylin or an amylin agonist. In contrast, as acknowledged by the Examiner (Office Action, page 21, lines 19-23), Kolterman '220 describes the use of an amylin agonist (i.e., pramlintide) for treating type II diabetes mellitus. Indeed, Kolterman '220 merely demonstrates that administration of an amylin agonist significantly reduces postprandial plasma glucose concentrations in patients with type II diabetes mellitus. In particular, Kolterman '220 does not teach the use of an amylin or an amylin agonist for treating obesity or demonstrate a reduction in body weight in those patients administered an amylin or an amylin agonist. Indeed, Kolterman '220 is silent with regard to the effect of an amylin or an amylin agonist on body weight.

The Examiner further asserts (Office Action, page 21, line 30 to page 22, line 3) that "Kolterman et al. ('220) taught the benefit of obtaining weight loss in Type II diabetic patients by teaching that hyperglycemia associated with Type II diabetes can be reversed or ameliorated by weight loss sufficient to restore the sensitivity of the peripheral tissues to insulin (see pages 7, first paragraph), ..." Applicants note that a careful reading of Kolterman '220 at page 7, first paragraph, provides that "the hyperglycemia associated with Type II diabetes can sometimes be

reserved or ameliorated by diet or weight loss... (*emphasis added*)." Nevertheless, with respect to the use of amylin or amylin agonists for reduction of weight in a subject in need thereof, Kolterman '220 is silent. Accordingly, whether or not Kolterman '220 discloses that weight loss is beneficial is irrelevant.

In an attempt to cure the deficiency in Kolterman '220, the Examiner relies on Tsanev (*Id.*) to provide alleged evidence that 80-90% of diabetic patients are obese. The crux of the Examiner's argument appears to be (Office Action, page 22, lines 12-18) that "[g]iven Tsanev's express disclosure that 80 to 90% of type II diabetic patients are intrinsically obese, and given Kolterman's ('220) recognition that obesity is an intrinsic characteristic of most patients with Type II diabetes mellitus and the indication that these patients are in need of weight loss, Kolterman's ('220) method of subcutaneous administration of pramlintide to at least one Type II diabetic patient in an amount that falls within the range recited in the instant claims, necessarily serves as the claimed method of treating obesity and therefore anticipates the instantly claimed method (*emphasis added*)."

However, the 80-90% of obese diabetic patients alleged by Tsanev (*Id.*) falls short of the 100% (i.e., always, under any circumstances) criterion required by the claims and required by the law as discussed in the response to the rejection under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 34 and 35 of the '411 patent (Office Action, page 7, item 26) above . See e.g., *Schering Corp. v. Geneva Pharms., Inc.*, *Id.*; *Abbott Laboratories v. Baxter Pharmaceutical Products, Inc.*, *Id.*) Thus, Kolterman '220 does not provide each and every element of the claimed invention. Accordingly, Applicants respectfully request reconsideration and withdrawal of the present rejection.

Claims 7,14 and 16

The rejection of Claims 7, 14 and 16 under 35 U.S.C. § 102(e)(2) (Office Action, page 24, item 34) for alleged anticipation over U.S. 5,321,008 ('008 patent) as evidenced by Tsanev (*Id.*) is respectfully traversed.

The claimed invention as exemplified in Claims 7, 14 and 16 is directed to methods of treating obesity in a human subject in need of such treatment through administration of an amylin

or an amylin agonist. In contrast, as acknowledged by the Examiner (Office Action, page 25, lines 5-8), the '008 patent describes "a method of subcutaneous administration to an insulin-requiring human who suffers from Type 1 or Type 2 diabetes mellitus a therapeutically effective amount of an amylin agonist alone such as calcitonin, or calcitonin and insulin, contained in a pharmaceutically acceptable carrier." The '008 patent is silent with respect to obesity, treatment of obesity, or intent to treat a human subject in need of treatment for obesity. In an attempt to cure the deficiency in the '008 patent, the Examiner relies on Tsanev (*Id.*) to provide alleged evidence that 80-90% of diabetic patients are obese. However, 80-90% falls short of the 100% (i.e., always, under any circumstances) criterion required by the claims and required by the law as discussed in the response to the rejection at Office Action, page 7, item 26, above. See e.g., *Schering Corp. v. Geneva Pharms., Inc., Id.*; *Abbott Laboratories v. Baxter Pharmaceutical Products, Inc., Id.*) Thus, the '008 patent does not provide each and every element of the claimed invention. Accordingly, Applicants respectfully request reconsideration and withdrawal of the present rejection.

Claims 7, 14, 16 and 17

The rejection of Claims 7, 14, 16 and 17 under 35 U.S.C. § 102(e)(2) (Office Action, page 27, item 35) for alleged anticipation over the '411 patent as evidenced by Tsanev (*Id.*) is respectfully traversed.

The '411 patent is silent with respect to treating obesity, nothing in the '411 patent teaches or suggests the use of an amylin or an amylin agonist in an amount effective to treat obesity, and nothing in the '411 patent teaches or suggests the identification of or intent to treat a subject in need of treatment for obesity.

In an attempt to cure the deficiency of the '411 patent, the Examiner relies on Tsanev (*Id.*) (Office Action, page 29, lines 27-28) to assert that "every element of the claimed subject matter is disclosed by Gaeta et al. ('411) with the unrecited limitation(s) being inherent as evidence by the state of the art." However, the law is clear that anticipation based on inherency is appropriate only when the prior art relied upon necessarily includes all of the elements of the claims in question (*Atofina v. Great Lakes Chemical Corp.* (*Id.*)) and is the natural result of following the instructions or examples of the prior art. See *SmithKline Beecham Corp. v. Apotex Corp.*, (*Id.*)

In the present case, the alleged 80-90% statistic according to Tsanev (*Id.*) falls short of the 100% (i.e., always, under any circumstances) criterion required by the claims and required by the law. Accordingly, the '411 patent does not anticipate the claimed invention, and Applicants respectfully request reconsideration and withdrawal of the present rejection.

Claims 1-7, 9, 11-14, 16 and 17

The rejection of Claims 1-7, 9, 11-14, 16 and 17 under 35 U.S.C. § 102(b) (Office Action, page 30, item 36) for alleged anticipation over Kolterman *et al.* (*Diabetologia*, **39**:492-499, April 1996) (hereinafter "Kolterman 1996") as evidenced by Itasaka *et al.* (*Psychiatr. Clin. Neurosci.* **54**:340-341) is respectfully traversed.

Kolterman 1996 merely describes the use of an amylin agonist, pramlintide, for treating patients with insulin-dependent diabetes mellitus and demonstrates that administration of the amylin agonist significantly reduces postprandial plasma glucose concentrations. Kolterman 1996 does not teach the use of the amylin agonist for treating obesity or demonstrate a reduction in body weight in those patients administered the amylin agonist. Kolterman 1996 does not report the weight of the subjects at the end of the study and nothing in the reference indicates that pramlintide had any effect on the weight of the subjects. Indeed, Kolterman 1996 is silent with regard to the effect of the amylin agonist on body weight.

In an effort to cure the deficiencies of Kolterman 1996, the Examiner relies on Itasaka et al. (*Id.*) to allegedly provide a correlation between body mass index (BMI) and obesity. Applicants respectfully disagree with the Examiner assertion (Office Action, page 31, last line to page 31,) that "the very active step recited in the instantly claimed method was disclosed and practiced by Kolterman et al. in April, 1996." The patient population of Kolterman 1996 is not necessarily the same as the claimed subject, *i.e.*, a subject in need of treatment for obesity. The Examiner has provided no extrinsic evidence to show that these patient populations are identically one in the same. Accordingly, Applicants respectfully note that the "fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic." *In re Rijckaert*, 9 F.3d 1531, 1534 (Fed. Cir. 1993). "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the references, and that it would be so

recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.' " *In re Robertson* 169 F.3d 743, 745 (Fed. Cir. 1999).

Furthermore, as discussed above the courts have held that the phrase "in need thereof" (e.g., as recited in independent Claims 1, 7, 14 and 16) is meaningful, and that "the claims' recitation of a patient or a human 'in need' gives life and meaning to the preambles' statement of purpose." *Jansen v. Rexall Sundown, Inc.* (*Id.*). Thus, Kolterman 1996 cannot render unpatentable the subject population of the claimed invention because Kolterman 1996 does not provide each and every element of the claimed invention. Accordingly, Applicants respectfully request reconsideration and withdrawal of the present rejection.

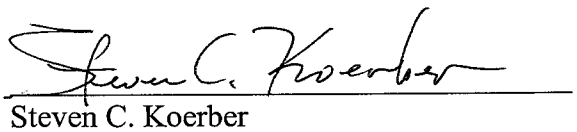
CONCLUSION

Applicants believe that all issues raised in the Office Action have been properly addressed in this response. Accordingly, reconsideration and allowance of the pending claims is respectfully requested. If the Examiner feels that a telephone interview would serve to facilitate resolution of any outstanding issues, the Examiner is encouraged to contact Applicants' representative at the telephone number below.

No additional fees are believed due for this submission beyond the fees for filing of the terminal disclaimers provided herewith. However, if a fee is due, the Commissioner is hereby authorized to charge payment of any fees associated with this communication, to Applicants' Deposit Account No. 010535 referencing Atty. Dkt. No. 226/104 US. Additionally, the Commissioner is hereby authorized to charge payment or credit overpayment of any fees during the pendency of this application to Applicant's Deposit Account No. 010535.

Date: April 11, 2008

Respectfully submitted,
AMYLIN PHARMACEUTICALS, INC.



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